ASSIGNMENT 8

Textbook Assignment: "Air Compressor Overhaul," and "The Shop Inspector," pages 8-1 through 9-11.

8-1. Operating an air compressor can be hazardous to your health for which of the following reasons?

1. Excessive smoke from high rpms
2. It can cause permanent hearing loss
3. The high-pressure air can cut through the skin and cause death through air embolism
4. Both 2 and 3 above

8-2. What are the three types of air compressors used in the NCF?

1. Piston, reciprocating, and sliding vane
2. Reciprocating, screw, and sliding vane
3. Screw, rotary piston, and sliding vane

8-3. Air compressors used by the NCF are different from those used in private industry.

1. True
2. False

8-4. Some air compressors may be specially mounted on modified trailers for which of the following reasons?

1. To lower the profile of the unit
2. To make the unit more maneuverable
3. To make preventative maintenance less of a problem
4. To allow the unit to be loaded on a C130 type of aircraft

8-5. A reciprocating air compressor is likely to be found in all except which of the following locations?

1. At a public works station
2. In a construction battalion on a project site
3. Under the hood of a unit of CESE
4. In a maintenance shop

8-6. The rotary vane type of air compressor is less of a maintenance problem than a reciprocating unit for which of the following reasons?

1. It has fewer moving parts
2. The internal parts are more finely machined
3. It is a more complex design

8-7. The vanes are farthest from the center of the rotor in what phase of the rotary compressor operation?

1. Intake
2. Discharge
3. Compression

8-8. In a rotary vane type of air compressor, the vanes are kept extended maintaining a wiping contact between the compressor casing and the edge of the vanes. This function is done by what means?

1. Oil pressure
2. Air pressure
3. Spring pressure
4. Centrifugal force

8-9. The vanes of a rotary compressor are sealed against the compressor casing wall by what means?

1. High-pressure air
2. Oil that is circulated through the air compressor
3. O-rings

8-10. At what point does compression take place in the rotary-screw air compressor?

1. When the volume decreases between the turning rotor blades
2. At the discharge end of the compression cycle
3. When it reaches the grooved rotor

8-11. The rotary-screw air compressor produces an extremely smooth operation for which of the following reasons?

1. Compression is completed before the air leaves the twin bore cylinder
2. It is a dual stage unit
3. The compression process is continuous

8-12. Oil is injected into the rotors of a screw-type air compressor for which of the following reasons?

1. To seal the rotor surfaces
2. To lubricate the working parts of the compressor
3. To cool the compressing air
4. Each of the above

8-13. When, if ever, may safety control devices be bypassed on a piece of air compression equipment?

1. When assigned projects need to be completed
2. When it is a piece of shop equipment and not rolling stock
3. Never

8-14. A compressor safety valve is normally set at what pressure?

1. 90 psi
2. 100 psi
3. 110 psi
4. 125 psi

8-15. An air compressor has shut down due to high discharge air temperature. It may be restarted after which of the following conditions is/are met?

1. The battery has been recharged
2. The oil has cooled
3. The reason for the shutdown has been determined
4. Both 2 and 3 above

8-16. When the air pressure reaches a set maximum in a reciprocating type of air compressor, the pressure control system causes which of the following events to happen?

1. The discharge valve to remain open
2. The suction valve to remain open
3. The discharge valve to remain closed
4. The check valve to open

8-17. In a reciprocating air compressor system with an electric motor as the power source, the motor runs only when the compressor cycle is operational.

1. True
2. False

8-18. In a rotary type of air compressor, air demand is controlled by what means?

1. Engine speed
2. Air intake opening
3. Both 1 and 2 above
4. Discharge valve opening

8-19. In a rotary type of air compressor, as air pressure drops, the air control system reacts in what way?

1. It opens the throttle
2. It opens the air valve
3. It opens the air valve and the throttle
4. It slows the compression cycle

8-20. The screw type of air compressor uses an air pressure control system much different from the rotary–type air compressor.

1. True
2. False

8-21. Which of the following materials must NOT be used as an air filter element in an air compressor?

1. Paper
2. Wire Mesh
3. Cotton

8-22. If the air filters become clogged in an air compressor, which of the following problems will occur?

1. Air compressor capacity will be lost
2. Engine performance will be lost
3. The air compressor will not unload

8-23. When using air pressure to clean dry type air filters, you should not exceed what maximum air pressure?

1. 10 psi
2. 30 psi
3. 50 psi
4. 75 psi

8-24. Gasoline should not be used to clean the air filter elements of air compressors for which of the following reasons?

1. It can cause explosive fumes to collect in the air receiver
2. It can cause hard starting
3. It can cause the engine to over speed
4. It can damage the rotor bearings

8-25. You are testing a dry type of air filter. When a concentrated light shines through the filter, you should take which of the following actions?

1. Reuse the filter as is
2. Reclean the filter and retest it
3. Replace the filter
4. Retain the filter for emergency use only

8-26. Oil separators are not required on reciprocating-type air compressors for which of the following reasons?

1. An aftercooler is used
2. An intercooler is used
3. The air system does not require lubrication
4. Oil is not circulated through the air system

8-27. If you remove the heat generated by compressing air, the total horsepower required for additional air compression is reduced up to what approximate percentage?

1. 5%
2. 10%
3. 15%
4. 25%

8-28. At what stage is oil injected into the compressor cycle in rotary- and screw-type air compressors?

1. The first stage
2. The second stage
3. The third stage
4. The cooling stage

8-29. The condensation drain on an air compressor in the cooler should be serviced at least how often?

1. Every 4 hours
2. Daily
3. Every 3 days
4. Weekly

8-30. Condensation is not desirable in an air system for which of the following reasons?

1. It causes air tools to operate sluggishly
2. It washes lubricants away from weak surfaces
3. It increases the need for maintenance
4. All of the above

8-31. Aftercoolers are normally found on what type of air compressor system?

1. Sliding vane
2. Reciprocating
3. Rotary
4. Screw

8-32. Small reciprocating air compressors normally use what type of lubrication system?

1. Splash
2. Power feed
3. Pressurized
4. Closed

8-33. A tight seal between each compartment of a rotary type of air compressor adds to its efficiency. This seal is formed by what means?

1. Gaskets
2. Moisture
3. Oil
4. Close contact of the rotating components

8-34. In most rotary- and screw-type air compressors, the oil is moved through the oil lines to the working parts of the air compressor by what device or force?

1. A gear type of oil pump
2. A piston type of oil pump
3. Air pressure
4. Vacuum

8-35. The thermostatic control valve directs heated oil through an oil cooler to keep the oil temperature in what range?

1. 110°F to 150°F
2. 130°F to 180°F
3. 150°F to 200°F
4. 180°F to 220°F

8-36. In a rotary type of air compressor, as the air/oil mix exits the last compressor stage, it enters what compartment?

1. The aftercooler
2. The thermostatic control unit
3. The air control unit
4. The air receiver

8-37. Before oil is added to a rotary or a screw type of air compressor, the unit must be shut down for what reason?

1. To allow it to cool down
2. To unload the air pressure
3. To allow the oil foam to subside

8-38. In most cases, the oil in the rotary- and screw-type air compressors should be changed at what hourly interval?

1. Every 200 hours
2. Every 300 hours
3. Every 500 hours
4. Every 750 hours

8-39. Which of the following types of air compressors produces breathable air for diving operations?

1. Reciprocating
2. Rotary
3. Screw
4. Diaphragm

8-40. You should start the equipment troubleshooting evolution by first taking which of the following actions?

1. Visually checking the unit
2. Questioning the operator
3. Running the unit and observing the operations

8-41. Which of the following conditions is most likely to cause an air compressor to overheat?

1. A clogged air filter
2. Worn rotor blades
3. A low oil level
4. A damaged oil separator

8-42. Noisy air compressor operation may be caused by which of the following problems?

1. Damaged internal parts
2. Low oil level
3. Both 1 and 2 above
4. Sticking rotor blades

8-43. If the drive engine shuts down while the air compressor is idling, what is the probable cause?

1. The unit is still cold
2. The air intake control valve is defective
3. The control lines are plugged
4. The unloader valve is leaking

8-44. A defective air intake control valve can cause an air compressor to malfunction in which of the following ways?

1. It will not unload
2. The compressor will overheat
3. The engine will stall during operation
4. The compressor will not reach design capacity

8-45. Which of the following actions should you take if the oil temperature limits of a unit are exceeded?

1. Change the oil
2. Return the unit to the shop for repair
3. Change the filter
4. Run the unit at a lighter load

8-46. The engine of an air compressor stalls during operation. Which of the following factors could cause this problem?

1. High discharge air pressure
2. A dirty compressor air filter
3. A dirty engine air filter
4. Worn rotor blades

8-47. Which of the following problems could be the cause of oil in the air discharge lines?

1. Worn rotor blades
2. Overheated compressor oil
3. Damaged oil separator
4. Leaking unloader valve

8-48. A properly maintained rotary or screw type of compressor operates reliably for approximately how many hours?

1. 5,000
2. 7,500
3. 10,000
4. 15,000

8-49. What is the primary wear point on a rotary vane type of air compressor?

1. The rotors
2. The rotor vanes
3. The bearings
4. The end plates

8-50. In a rotary vane type of compressor, the rotor vanes may be removed with the rotor in any position.

1. True
2. False

8-51. A rotor slot with a slight saw-toothed trailing edge will have what effect, if any, on the rotor vanes?

1. Cause breaking
2. Cause shifting
3. Cause rapid wear
4. None

8-52. What should you do with bearing races that have been removed by heating?

1. Discard them
2. Refinish them and reuse them
3. Reuse them after they cool

8-53. Before you reassemble a rotary- or screw-type air compressor, you should treat the parts in what way?

1. Lightly coat the bearing surface only
2. Dry them all completely
3. Coat them all with a light coat of grease
4. Lightly oil all of them

8-54. As a CM1 assigned to a shop, your job will consist of which of the following responsibilities?

1. Making regular CESE inspections
2. Looking for inoperative devices that make a vehicle unsafe
3. Looking for damage caused by dangerous or improper operating procedures
4. Each of the above

8-55. The individual assigned as a vehicle inspector should be a senior mechanic capable of performing which of the following functions?

1. Operating the equipment he is inspecting
2. Readily determining necessary repairs of equipment
3. Handling shop personnel contacts in a mature and tactful manner
4. All of the above

8-56. When a reserve Naval Mobile Construction Battalion is recalled to active duty what pm cycle does that unit use?

1. It retains the same pm cycle
2. A standard 40-day cycle
3. A 60–day pm cycle
4. An 80-day pm cycle

8-57. When you are performing repairs or maintenance, at what time should the unit be operationally tested?

1. Before the work is performed
2. After the work is performed
3. Before and after the work is performed
4. In the field

8-58. If vehicle abuse is suspected, the inspector should notify which of the following persons?

1. The dispatcher
2. The yard boss
3. The maintenance supervisor
4. The Alfa company commander

8-59. What action should be taken if the front tires of a bus, truck, or tractor-trailer are worn to less than 4/32 of an inch?

1. They should be replaced immediately
2. The frequency of inspections should be increased
3. They should be replaced at the next pm cycle

8-60. Vehicle lighting requirements are found in which of the following publications?

1. Federal motor carrier regulations pocketbook
2. NAVFAC P-404
3. NAVFAC P-405
4. NAVFAC p-437

8-61. When repair, adjustment, and preventive maintenance frequency specifications are not available, they should be developed under the direction of what person?

1. The shop supervisor
2. The transportation supervisor
3. The transportation director
4. The department head

8–62. While working in a construction battalion, the shop inspector is directly responsible to what person?

1. The shop supervisor
2. The maintenance supervisor
3. The cost control supervisor
4. The heavy shop supervisor

8-63. A series of properly conducted BEEP inspections provide the maintenance supervisor with a means for establishing which of the following items?

1. A pm schedule
2. A shop work load plan for the deployment
3. A vehicle safety inspection plan

8-64. Repairs of more than how many hours are normally deferred until after the completion of the BEEP?

1. 1 hour
2. 2 hours
3. 3 hours
4. 4 hours

8-65. When inspecting equipment for embarkation, you should make sure the collateral equipment is handled in what way?

1. Loaded with the vehicle
2. Placed in storage until the unit returns
3. Boxed and shipped separately
4. Stored at the maintenance shop

8-66. When accomplishing the vehicle loading configurations during embarkation, you should itemize the tasks on what form?

1. The hard card
2. The Shop Repair Order
3. The Equipment Repair Order

8-67. To make sure all parts work, you should have the crane crew personnel cycle the cranes at least how often?

1. Every 3 days
2. Every 5 days
3. Every 10 days
4. Every 25 days

8-68. What NAVFAC publication is an excellent source of information on preservatives and their uses?

1. P-405
2. P-433
3. P-434
4. P-437

8-69. Deadlined equipment is inspected at least how often?

1. Daily
2. Weekly
3. Monthly
4. At its scheduled pm date

8-70. The interchanging of controlled parts may be authorized by what person?

1. The maintenance supervisor
2. The shop supervisor
3. The inspector
4. The company commander

8-71. What type of equipment repair order is initiated for a vehicle that has been involved in an accident?

1. Type 01
2. Type 04
3. Type 06
4. Type 12

8-72. The crane certifying officer is designated by what person?

1. The Alfa company commander
2. The operations officer
3. The commanding officer
4. COMCBPAC/COMCBLANT DET OIC

8-73. When you are inspecting cranes, which of the following NAVFAC publications should you use as a guide?

1. P–306
2. P-307
3. P-405
4. P-437

8-74. As an inspector, if you do not think the quality of work leaving the shop is satisfactory, which of the following actions should you take?

1. Inform the maintenance supervisor
2. Return the ERO to the shop supervisor
3. Both 1 and 2 above
4. Return the ERO to the mechanic